

ABSTRACT OF THE DISCLOSURE.

In the fire location, an ambient or atmospheric air mass flow (been a gas mixture of dry air and superheated water vapor) is compressed by a compression package. A hose transports this compressed air mass flow a given distance away up to a flames site, where an arrangement of pipes, elbow accessories, throttle valves, nozzles, and a distribution manifold, conforming together a fire fight boom with a "blast-gun", allow the operator to direct upon the flames, a high speed ambient air jet containing water droplets with a high flame front aerodynamic penetration capability, which brings about the flames blown off and remaining not burned materials combustion inhibition. Such a high speed air jet containing water droplets is generated by the compressed air mass flow expansion in a jacketed convergent-divergent nozzle, whereinto a condensation shock wave is established producing such water droplets from the local ambient air water vapor contents. The air jet proximity to the flames' origin is important, and the operator's movements can be controlled by a wheel, a pneumatic cylinder, supports, and pivoted anchors. To preclude, in this process, the inflammation of surrounding non burning materials and the existence of runaway flame fronts, different aerodynamic flame containment mechanisms are formed by other air jets produced in convergent nozzles air expansions. To allow the low temperatures required and the successful establishment of the condensation shock wave, a cooling air flow insulates, from the hot flame environment, the air flow expansion in the jacketed convergent-divergent nozzle. The aspersion mechanism formed by the air mass flow expansion, is utilized also to deliver different chemical fire fight agents to the flames sites with a high flame front penetration capability.
